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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,128	10/10/2001	Sandesh Goel	P140US1	1631

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EXAMINER	
PHUNKULH, BOB A	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/975,128	GOEL ET AL.	
	Examiner	Art Unit	
	Bob A. Phunkulh	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This communication is in response to applicant's 11/10/2005 amendment(s)/response(s) in the application of **GOEL et al.** for "**SYSTEM AND METHOD FOR PROVIDING AUTOMATIC RE-TRANSMISSION OF WIRELESSLY TRANSMITTED INFORMATION**" filed 10/10/2001. The amendments/response to the claims have been entered. No claims have been canceled. Claims 31-33 have been added. Claims 1-33 are now pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 8-12, 15-16, 19-20, 26-27, 30-33 are rejected under 35 U.S.C. 102(e) as being anticipated by *Johansson* et al. (US 6,643,813), hereinafter *Johansson*.

Regarding claim 1, *Johansson* '813 disclose a method of wirelessly transmitting and re-transmitting sub-protocol data units between a transceiver and a subscriber unit, the method comprising:

the transceiver receiving the standard data unit and forming sub-protocol data unit (receiving higher layer packet at segmentation concatenation unit 82 an segmenting the packet into PDUs, see figure 6 and col. 6 line 58 to col. 6 line 17).

the transceiver transmitting the PDU to the subscriber, a subset of the plurality of PDU comprising an acknowledge request indicator (analyzing plural data units in a group or a block rather than analyzing individual data units; all of the polling fields (P field) of the data units in this group are set to indicate a poll request, see col. 1 lines 64 to col. 2 line 10; and col. 6 lines 15-17);

the subscriber unit receiving the PDU (see col. col. 6 lines 35 to 45);

the subscriber unit transmitting back to the transceiver a response to acknowledge request indicator, indicating which PDU were successfully received by the subscriber unit (see col. 6 lines 58-61).

Regarding claim 2, *Johansson* '813 discloses the transceiver buffering the sub-protocol data units within transceiver buffers (retransmit buffer 86, see figure 6).

Regarding claim 8, *Johansson* '813 discloses the response to the acknowledge request includes a bit map that comprises information about which sub-protocol data units have been successfully received by the subscriber (see col. 5 lines 52-56 and figure 5B).

Regarding claim 9, *Johansson* '813 discloses the response to the acknowledge request includes a hole indicator that indicates which sub-protocol data units of a receiver window that includes a predetermined number of sub-protocol data units were not successfully received by the subscriber unit (the "Bitmap" field indicates the erroneous or missing data PDUs between a first received sequence number and a starting sequence number, see col. 5 lines 52-56).

Regarding claim 10, *Johansson* '813 discloses the transceiver re-transmitting the sub-protocol data units that were not successfully received by the subscriber unit (see col. 1 line 63 to col. 2 line 7).

Regarding claim 11, *Johansson* '813 discloses the re-transmitted sub-protocol data unit are provided with a different transmission priority than sub-protocol data unit that have not yet been transmitted (see col. 6 lines 46-61).

Regarding claim 12, *Johansson* '813 discloses the re-transmitted sub-protocol data unit are provided with a different transmission mode (different priority) than sub-protocol data unit that have not yet been transmitted (see col. 6 lines 46-61).

Regarding claim 15, *Johansson* '813 discloses the transceiver clears a present transceiver buffer when the response to the acknowledge request has been received, and all sub-protocol data units have been successfully received by the subscriber unit

(block 94 forwards properly received PDUs to block 84, see col. 6 lines 42-45).

Regarding claim 16, *Johansson* '813 discloses the subscriber unit comprises a buffer in which received data unit are buffered (receive buffer 96, see figure 6).

Regarding claim 19, *Johansson* '813 disclose a method of wirelessly transmitting and re-transmitting sub-protocol data units between a transceiver and a subscriber unit, the method comprising:

the transceiver receiving the standard data unit and forming sub-protocol data unit (receiving higher layer packet at segmentation concatenation unit 82 an segmenting the packet into PDUs, see figure 6 and col. 6 line 58 to col. 6 line 17).

the transceiver transmitting the PDU to the subscriber, a subset of the plurality of PDU comprising an acknowledge request indicator (analyzing plural data units in a group or a block rather than analyzing individual data units; all of the polling fields (P field) of the data units in this group are set to indicate a poll request, see col. 1 lines 64 to col. 2 line 10; and col. 6 lines 15-17);

the subscriber unit receiving the PDU (see col. col. 6 lines 35 to 45);

the subscriber unit transmitting back to the transceiver a response to acknowledge request indicator, indicating which PDU were successfully received by the subscriber unit (see col. 6 lines 58-61).

Regarding claim 20, *Johansson* '813 discloses the transceiver buffering the sub-protocol data units within transceiver buffers (retransmit buffer 86, see figure 6).

Regarding claim 26, *Johansson* '813 discloses the re-transmitted sub-protocol data unit are provided with a different transmission priority than sub-protocol data unit that have not yet been transmitted (see col. 6 lines 46-61).

Regarding claim 27, *Johansson* '813 discloses the re-transmitted sub-protocol data unit are provided with a different transmission mode (priority) y than sub-protocol data unit that have not yet been transmitted (see col. 6 lines 46-61).

Regarding claim 30, *Johansson* '813 disclose the transceiver clears a present transceiver buffer when the response to the acknowledge request has been received, and all sub-protocol data units have been successfully received by the subscriber unit (block 94 forwards properly received PDUs to block 84, see col. 6 lines 42-45).

Regarding claim 31, *Johansson* '813 discloses a wireless communication device comprising:

a controller to receive standard data units (higher layer packet) and from sub-protocol data units for transmission to a remote transceiver (segmentation, concatenation, the higher packet into PDU of fixed length, see figure 6 and col. 6 lines 2-3), at least one of the plurality of PDU including an acknowledge request indicator

from the remote transceiver (analyzing plural data units in a group or a block rather than analyzing individual data units; all of the polling fields (P field) of the data units in this group are set to indicate a poll request, see col. 1 lines 64 to col. 2 line 10; and col. 6 lines 15-17), the response(s) including an indication of which sub-PDU were successfully received by the remote receiver, and selectively re-transmit at least a subset of the sub-PDU indicated in the response (see col. 1 lines 35-38); and

. a transmitter, response to the controller to transmit and selectively re-transmit sub-PDU as indicated by the controller to the remote transceiver (the PDUs stored in the transmit buffer 90 are then transmitted in accordance with flow control signals from the RLC controller 80 to the lower MAC layer for transmission via the physical layer to the receiver over the radio interface, see col. 6 lines 8-11).

Regarding claim 32, *Johansson* '813 discloses the apparatus is a transceiver (figure 6, the apparatus is both transmitter and receiver) and the controller is a media access controller MAC of the transceiver (figure 6 and col. 5 line 66 to col. 6 line17).

Regarding claim 33, *Johansson* '813 discloses the apparatus is a transceiver (figure 6, the apparatus is both transmitter and receiver) and the controller is an element of the physical interface of the transceiver (see figure 6 and col. 6 lines 1-11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3-4, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Johansson* in view of *McDonnell* (US 6,763,491).

Regarding claims 3-4, 21-22, *Johansson* '813 fails to disclose the transceiver transmits a sub-protocol data unit comprising the acknowledge request indicator when a last sub-protocol data unit within the transceiver buffers to be transmitted is reached or when a predetermined number of sub-protocol data units have been transmitted since a previous sub-protocol data unit that comprised a previous acknowledge request indicator was transmitted.

McDonnell, on the other hand, discloses the transceiver transmits a sub-protocol data unit comprising the acknowledge request indicator when a last sub-protocol data unit within the transceiver buffers to be transmitted is reached or when a predetermined number of sub-protocol data units have been transmitted since a previous sub-protocol data unit that comprised a previous acknowledge request indicator was transmitted (the polling message is transmit after transmitting a predetermined data blocks (every 20^{th} transmitted data blocks), see col. 6 lines 28-41).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made includes the teaching of *McDonnell* in the system taught by *Johansson* for providing reliable data transmission at within a transmission interval

in a radio communication system which provide for automatic retransmission of incorrectly received data blocks.

Claims 5, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Johansson* in view of *Gilbert* et al. (US 5,559,810), hereinafter *Gilbert.*

Regarding claims 5, and 23, *Johansson* '813 fails to explicitly disclose that a frequency of data units that comprise of acknowledge request indicator are transmitted is dependent upon a quality of wireless transmission link.

Gilbert, on the other hand, discloses when channel conditions between a sender and a receiver are poor, the need for re-transmission is high (see col. 1 line 55 to col. 2 line 3).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made transmit acknowledge request indicator to the receiver based the channel condition of the link between the sender and the receiver in order to make sure the receiver receive the transmitted data correctly and retransmit the transmitted data quickly if needed.

Claims 6-7, 24-25, are rejected under 35 U.S.C. 103(a) as being unpatentable over *Johansson* '813 in view of *Johansson* (US 6,947 394).

Regarding claims 6-7, 24-25, *Johansson '813* fails explicitly disclose the transmitter transmits how frequently sub-protocol data units comprising the acknowledge request indicator are transmitted is dependent upon a predetermined time

duration since the transmitter received a response to an acknowledge request indicator or an acknowledge request indicator after a predetermined time duration since the transmitter received a response to an acknowledge request indicator.

Johansson '394, on the other hand, discloses transmitter transmits how frequently sub-protocol data units comprising the acknowledge request indicator are transmitted is dependent upon a predetermined time duration since the transmitter received a response to an acknowledge request indicator or an acknowledge request indicator after a predetermined time duration since the transmitter received a response to an acknowledge request indicator (see col. 4 line 8 to col. 5 line 2).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made includes the teaching of *Johansson* '394 in the system taught by *Johansson* '813 for providing a flexible RLC control based on the type of service that can readily adapt to the multitude of different service situations.

Claims 14, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Johansson* in view of *Malmgren* et al. (US 6,778,501), hereinafter *Malmgren*.

Regarding claims 14, 29, *Johansson* fails explicitly discloses the transmitter aborts the buffer if the response to the acknowledge request has been received.

Malmgren, on the other hand, teaches the sender can, based on the PDU status information, determine whether certain PDUs in its buffer should be released, to make room for new PDUs, or retransmitted in the event they were not successfully received (see col. 2 lines 10-13).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made implement the teaching of *Malmgren* in the system taught by *Johansson* '813 in order to stop buffering the received data units if data units with errors are not correctly retransmitted after a given period of time. The reason being the user will not want continue receiving corrupted or errors prone data units.

Claims 13, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Johansson* in view of *Koo* et al. (US 2002/0071407), hereinafter *Koo*.

Regarding claims 13, 28, *Johansson* '813 fails to explicitly disclose that the re-transmitted data units are transmitted over a better of multiple transmission channels; re-transmitted data units are give different transmission priority or different mode.

Koo, on the other hand, discloses the re-transmitted data units are transmitted over a better of multiple transmission channels; re-transmitted data units are give different transmission priority or different mode (see paragraphs 28-32).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made implement the teaching of *Koo* in the system taught by *Johansson* '813 in order to increase the throughput of a downlink and reducing a processing delay time and preventing an increase in a required memory capacity due to repeated retransmissions.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of *Johansson* in view of *Johansson* et al. (US 6,473,399), hereinafter *Johansson* '399.

Regarding claim 18, *Johansson '813* fails to disclose that the subscriber unit transmits a pseudo response to an acknowledgement indicator if the subscriber fails to receive re-transmitted sub-protocol data units after a predetermined amount of time.

Johansson, on the other hand, disclose if the requested one or more data units to be retransmitted is not received or is erroneously received, a request for retransmission is sent to the sender (see col. 2 lines 50-59).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made implement the teaching of *Johansson* '399 in the system taught by *Johansson* '813 in order to make sure the subscribe receive the correct data unit.

Response to Arguments

Applicant's arguments with respect to claims 1-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any response to this action should be mailed to:

The following address mail to be delivered by the United States Postal Service (USPS) only:

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Bob A. Phunkulh** whose telephone number is **(571) 272-3083.** The examiner can normally be reached on Monday-Tursday from 8:00 A.M. to 5:00 P.M. (first week of the bi-week) and Monday-Friday (for second week of the bi-week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor **Wellington Chin**, can be reach on **(571) 272-3134.** The fax phone number for this group is **(571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bob A. Phunkulh
Primary Examiner
TC 2600
Technology Division 2616
February 6, 2006

BOB PHUNKULH
PRIMARY EXAMINER